Release Notes

# hp StorageWorks Fabric Manager 4.1.0

Third Edition (January 2004)

**Part Number:** AA–RUR2C–TE

This document contains last-minute and supplemental information about Fabric Manager 4.1.0. In the event of conflicting information between these Release Notes and other documents in this product release, the Release Notes take precedence.

For the latest version of these Release Notes and other Fabric Manager documentation, go to the HP storage web site at: http://www.hp.com/country/us/eng/prodserv/storage.html.

Printed in the U.S.A.

Fabric Manager 4.1.0 Release Notes
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# About this document

This section identifies the audience of this Release Notes document and provides a high-level description of the information it contains.

## Release Notes information

This document covers the following major topics:



## Audience

These Release Notes are intended for systems administrators and technicians who are responsible for installing, operating, and maintaining Fabric Manager applications.

## Other Fabric Manager documentation

For the latest information, product updates, and documentation, visit the HP StorageWorks web site:http://www.hp.com/country/us/eng/prodserv/storage.html.

To access the technical documentation:

1. Locate the **networked storage** section of the Web page.
2. Under **networked storage**, go to the **by type** subsection.
3. Click **SAN infrastructure**. The **SAN infrastructure** page displays.
4. Locate the **fibre channel switches** section.
5. Click the appropriate product name. The product overview page displays. Go to the **product information** section.
6. Click **technical documents**.

For information about Fibre Channel standards, visit the Fibre Channel Industry Association web site, located at http://www.fibrechannel.org.

# Overview

HP Fabric Manager is an application that manages multiple StorageWorks switches and fabrics in real time. Fabric Manager provides the essential functions for efficiently configuring, monitoring, dynamically provisioning, and managing StorageWorks SAN fabrics on a daily basis.

Through its single-point SAN management platform, Fabric Manager facilitates the global integration and execution of management tasks across multiple fabrics, thereby lowering the overall cost of SAN ownership. As a result, Fabric Manager provides a flexible and powerful tool optimized to provide organizations with rapid access to critical SAN information.

Fabric Manager is tightly integrated with other HP StorageWorks SAN management products, such as Web Tools and Fabric Watch. Organizations can use Fabric Manager in conjunction with other leading SAN and storage resource management applications as the drill-down element manager for single or multiple fabrics.

## Information about new features

New host operating system support for:

- Solaris Server
- Windows XP Client

## Highlights

Fabric Manager 4.1.0 enables the user to:

- Provision, monitor, and administer large numbers of switches and multiple StorageWorks SAN fabrics with greater efficiency.
- Perform management tasks across multiple devices and fabrics as a single management operation.
- Intelligently group multiple HP B-series Fabric switches or ports to facilitate aggregated management.
- Visualize and track changes to SAN configuration and state information through multiple views at multiple levels of detail.
- Launch Fabric Manager from other enterprise management applications as the element manager for the fabric or multiple fabrics.

- Track SAN assets by using detailed table views that can be exported to a spreadsheet.
- Discover details about devices logged into the fabric, including Host Bus Adapter (HBA) asset information.
- View the SAN layout through a topology map that specifies Inersite Link (ISL), switch, and device details.
- Identify, isolate, and manage SAN events across large numbers of switches and fabrics.

## Information about key features

Fabric Manager provides features to help you quickly and easily maintain, monitor, and configure your SANs.

### Discovery

This feature includes the following:

- Discovery of all switches.
- Discovery of switches and fabrics through subnet scanning.
- Device information, including Fabric Device Management Interface (FDMI) data, if available.
- Allowing users to select whether SAN elements are displayed by WWN, domain-port ID, IP address, or element name.
- A tree view of elements organized by fabrics and switch-port groups.
- Users' choice of up to eight different predefined views.
- A drill-down capability that allows detailed element information to be displayed.
- Actions or elements that can be launched directly by the right mouse button.
- Intelligent handling of fabric segmentation and merging.

### Fabric, switch, and port administration

These include the following features:

- Web Tools that can be invoked for a specific switch to perform element management, such as switch administration, Fabric Watch, and performance monitoring.

- Naming of fabrics, switches, and ports.
- Enabling and disabling of switches and ports.
- The saving of switch login credentials for a specific session, so that users must authenticate themselves only once for a switch. The same credentials can be used across multiple switches.
- The maintenance of sessions once authentication with a switch has succeeded, including managing session expiration.
- Time synchronization across fabrics.

## SAN element grouping

SAN elements, such as switches and ports, can be aggregated into groups. Administration of these groups, such as enabling and disabling them, can be accomplished simultaneously. Elements can be in multiple groups. Groups can be nested to arbitrary depths. Groups can also be exported and imported, allowing them to be shared across multiple Fabric Manager client instances.

## Firmware and configuration download

Firmware and configuration download allows the following:

- Download across fabrics to all HP B-series fabric switches and firmware versions.
- In-band firmware download to HBAs.
- Configuration upload and download across fabrics to all HP B-series fabric switches and firmware versions.

For more information, refer to Chapter 12, “Firmware Download,” in the *HP StorageWorks Fabric Manager 4.1.x User Guide*.

## Sequenced reboot

This feature enables the creating and saving of a sequence of rebooting groups of switches in a fabric in a predetermined order. These sequences can be executed with different inter-sequence delays and with checks for fabric stability after a reboot. For more information, refer to Chapter 18, “Sequenced Reboot,” in the *HP StorageWorks Fabric Manager 4.1.x User Guide.*

## Fabric checking

Fabric checking provides the ability to:

- Retrieve and save the current state of a fabric with respect to switch membership (as a baseline, for example).
- Retrieve and save complete ISL information on the fabric, including trunking information.
- Detect and display differences between the current and the saved states, according to status levels set by the user.
- Merge compatibility and incompatibility across zoning, security, and similar potentially conflicting areas.

For more information, refer to Chapter 15, "Fabric Merge Check," in the *HP StorageWorks Fabric Manager 4.1.x User Guide*.

## Topology

Topology refers to the use of ISL and Fabric information (as populated in the object model) to graphically render various SAN elements and their relationships and links.

## Events and status

These include the following:

- Displaying a list of events for each switch.
- Propagating the events of an element (such as a switch) up to the fabric or user-defined switch group to allow aggregation of event data.
- Providing reasons for various statuses using sources, such as ISL checking, fabric checking, switch status, and connectivity.
- Displaying the reason field with event information together to make it easier to troubleshoot problems in the fabric.
- Monitoring and displaying related events.
- Propagating status upwards within groups (such as fabrics or user-defined element groups). The status of a fabric can be seen even when the Fabric Manager application is iconified.

## At-a-glance and tabular views

These include the following:

- Thirteen levels of at-a-glance hierarchical views from a device level up to a SAN level, displaying aggregated data in user-selectable, reorderable, and expandable items.

- Dynamic views that are easily extendable and can be configured to display different data from the fabric data model.
- Filtering based on an element type that can cascade, starting from any point in the fabric element tree.
- A portgrid-specific table view that enables a user to quickly see all the F-ports in the fabric and the devices that are attached to them.

## Data polling

Fabric Manager is a multi-threaded application that polls for information about various elements in the SAN at predetermined intervals.

## License management and e-licensing

This includes the automatic distribution of license keys to multiple switches in a SAN.

The e-Licensing feature allows a customer to create a license key request using transaction key files. The feature also allows a customer to submit the request to the HP authorization center web site: http://webkey.external.hp.com/welcome.asp.

The request is processed and the licenses are returned to Fabric Manager, which then deploys them to the appropriate switches.

Fabric Manager can display, store, load, and reload your license keys to ensure that you do not lose them if your switch fails. For more information, refer to Chapter 7, “Licensing,” in the *HP StorageWorks Fabric Manager 4.1.x User Guide*.

## Persistence

Fabric Manager preserves some application-specific data across sessions. This data includes fabric, switch, port, and group names, fabric and group memberships, reboot sequences, and existing license keys.

## Call-home support

Call-home support includes:

- A client-side GUI that allows a user to configure the conditions that will trigger a call-home action.
- Server monitoring of a user-configurable set of switches for changes and events in order to send a request for action based on configured parameters.

# System requirements

Fabric Manager can accommodate ports and switches as specified in Table 1.

**Table 1: Port and switch requirements**

| SAN Setup | System Requirements |
|---|---|
| Up to 500 ports and 30 switches | 256 MB memory, 800 MHz CPU |
| 500 or more ports and 30 or more switches[1] | 512 MB memory, 1.5 GHz CPU |

[1] When monitoring more than 30 switches while using the Call Home feature, consider using a separate machine to run the Fabric Manager server.

Fabric Manager 4.1.0 supports the following platforms:

- SAN switch 8 and 16
- SAN switch 2/8, 2/16, and 2/32
- Core switch 2/64

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**Note:** You must enable HTTP protocol on every switch that you want to discover, monitor, and configure with Fabric Manager.

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For the following Fabric Manager features to run, you must enable HTTP on your SAN:

- Firmware download
- Sequenced reboot
- Port name change on switch
- License management
- Configuration handling
- Multi-fabric administration
- Topology and ISL monitoring

Some Fabric Manager features run only on particular firmware versions. Table 2 lists the features that run only on particular versions and the versions on which they run.

**Table 2: Firmware-specific features**

| Feature | Minimum Firmware |
|---|---|
| Port name change on a switch | 3.1.0, 4.1.0 |
| Topology, ISL monitoring | 2.6.1, 3.0, 3.1.0, 4.0, 4.1.0 |
| Security | 2.6.x, 3.1.0, 4.1.0 |
| Port swapping | 4.1.0 |
| FDMI/HBA firmware download | 3.1.0, 4.1.0 |

**Note:** Please check http://www.hp.com/ for availability of FDMI capable HBAs.

## Fabric Manager host support

Fabric Manager runs on the following operating systems:

- Windows XP - Fabric Manager Client and Fabric Manager Server
- Windows® 2000 - Fabric Manager Client and Fabric Manager Server
- Windows NT® - Fabric Manager Client (no server)
- Solaris 2.7 - Fabric Manager Client (no server)
- Solaris 2.8 - Fabric Manager Client and Fabric Manager Server

**Note:** The Fabric Manager Client needs to access the switches under management through an IP-Ethernet connection. It is not sufficient to have access only to the switches from the Fabric Manager Server's machine in the case where the client and server are on different machines.

**Note:** Web Tools require a Java™ plug-in. Refer to your feature documentation to find the plug-in that you need.

## Fabric Manager server

Fabric Manager server runs on the Windows 2000 operating system. Each Fabric Manager server can support up to five Fabric Manager clients.

# Installation

Fabric Manager installation on Windows and Solaris systems is explained in the sections that follow.

## Windows 2000, Windows NT, and Windows XP

To install the Fabric Manager Client and Server on systems running these Windows systems:

1. Insert the Fabric Manager CD into the CD-ROM drive.

   The CD launches the Fabric Manager Installation Wizard.

2. Follow the Installation Wizard instructions to complete the installation.

## Solaris

To install the Fabric Manager Client and Server on systems running Solaris:

1. Insert the Fabric Manager CD into the CD-ROM drive.
2. Navigate to the `Solaris` folder.
3. Execute `Install.bin`.

## Running Fabric Manager

The Fabric Manager server runs as a service on Windows systems and is started automatically after installation. To run the Fabric Manager client:

1. For the Windows Fabric Manager client, select **Start > Fabric Manager > Fabric Manager** and then go to step 3.
2. For the Solaris Fabric Manager client, navigate to the `FM install` folder and execute `./startFabricManager`.
3. Enter the IP address of the Fabric Manager server that is running on Windows, providing login authentication (even if the client is running on Solaris).

4. Enter the IP address or the name of a switch in the **Address** field to start managing your fabric.

# Installation notes

- The supported operating systems are:
  - Client and Server: Windows 2000 Server or Professional, Windows XP, Solaris 8
  - Client Only: Windows NT, Solaris 7
- If the Setup-Install GUI does not come up during install, issue the DOS command `dxdiag` and make sure that the graphics tests run without error. If any DirectX files are missing, or if any diagnostics fail, go to the Microsoft® web site and upgrade to the latest version of DirectX.
- To find the domain name to use as the windows authentication domain that must be specified during installation, open a DOS Window and type `set`. The alias USERDOMAIN indicates the active domain. If the client and server are to reside on different Microsoft domains, both domains *must* have trusts established between each other, or Fabric Manager will not be able to authenticate the client. Users should know which domain their systems are in, or check with their IT departments. Also note that this domain is *not* the *Internet* domain (as in `corp.mycompany.com`); it is the domain name Microsoft uses for authentication.
- The client software polls the fabric information directly, so the client must be able to access each switch via an IP connection. Make sure the network environment does not have a proxy server or firewall between the client and the server and the switches. If one exists, ensure that proper rules are set up to allow access. To monitor switches for call-home events, only the server needs IP connectivity to the switches.
- If you have a problem installing on a Solaris system, you may be able to resolve it by making sure the recommended J2SE patches for Solaris Java applications are installed. These patches can be found at: http://sunsolve.sun.com/pub-cgi/show.pl?target=patches/patch-access.

  Use the appropriate patch for your version of Solaris. Issues may also be encountered when using X-Windows emulators from Windows to access the Sun host.

- Java is keyed to whatever version your browser or switch needs for Web Tools. Java JRE, however, is now embedded into the Fabric Manager installation and may be separate from another version of Java already installed on the system. Use the following procedure to determine the Java version in use for Fabric Manager:

  1. Change directory to `C:\Program Files\Fabric Manager\jre\bin.`
  2. Run the DOS command `java-version` to determine the version of Java in use. The current version of JRE for FM is 1.4.1_03.

- Before installing, check to make sure the system has the latest video drivers installed (to be safe, you may wish to upgrade to the latest DirectX drivers as well). Certain systems may crash with a "blue screen" or the setup GUI may not start up—due to an interaction between Java, Microsoft DirectX drivers, and the video driver. This crash and the GUI issues are resolved by upgrading the drivers and DirectX to their latest versions. The following link takes you to the Sun page that describes the issue (search on "blue screen"): http://java.sun.com/j2se/1.4.1/relnotes.html.

## Installing and reinstalling Fabric Manager

Customers must purchase a Fabric Manager license to get Fabric Manager 4.1 (part number 345690-B21). To upgrade from Fabric Manager 3.x to 4.x, you must purchase an upgrade kit (part number 345691-B22). To upgrade from version 3.0 to 4.x, you can just run install and overwrite the earlier version.

To upgrade from version 4.x to 4.1.0 (same or newer version and Client-Server on the same system), you can just run install and overwrite the earlier version.

After installing the Evaluation version, users must upgrade to a licensed version within 60 days. Once the time-out occurs, users are presented with a dialog that allows them to license the product.

## Changing user settings after installation

On Windows, for Domain, edit `C:\FMServer\server\FabricManagerServer\conf\login-config-xml` and change the following to match the new domain name:

```
<application-policy name="Win32Procurator"
<authentication>
<login-module
code="com.your_company.procurator.mbeans.clientmanagement.WinNTLog
inModule"
```

```
flag="required">
<module-option name = "domain">your_company</module-option>
```

For Mail Server settings, edit `C:\FMServer\server\FabricManagerServer\deploy\mail-service.xml` and change the following three items:

```
<!-- Change to the mail server -->
<property name="mail.pop3host"
value="mail.your_company.com"/>


<!-- Change to the SMTP gateway server -->
<property name="mail.smtp.host"
value="mail.your_company.com"/>


<!-- Change to the address mail will be from -->
<property name="mail.from"
value="markpc1@your_company.com"/>
```

On Solaris, for Domain, edit

`C\FMServer\server\FabricManager\Server\conf\login-config.xml` and change the following to match the new domain name:

```
<application-policy name="NISProcurator">

<authentication>

<login-module>
code="com.your_company.procurator.mbeans.clientmanagement.
NISLoginModule"

flag="required">
<module-option name = "nis-domain">fmgr138/fmgr</module-option>

</login-module>
<login-module
code="com.your_company.procurator.mbeans.clientmanagement.
ClientsLoginModule"

flag="required">

</login-module>

</authentication>

</application-policy>
```

The Fabric Manager Service must be restarted for the changes to take effect.

# Important notes

License Agreement: For licensing terms, consult the End User License Agreement (EULA) distributed with this product.